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The impact of information technology on the financial performance of diversified firms

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Abstract

Diversification may increase economic benefits through more efficient utilization of business resources across multiple markets. However, the benefits of these scope economies are often not realized due to costs of coordinating resources in multiple markets. Information technology (IT) is widely used to achieve more efficient coordination by reducing the costs of coordinating business resources across multiple markets. Because of the need for coordination of business resources across multiple markets, diversification can increase the demand for IT. But does increased use of IT improve the performance of diversified firms? This research tackles this question by undertaking an empirical study of the impact of IT on the financial performance resulting from diversification by focusing on the strategic direction chosen by different firms. The empirical aspects of this subject have received little attention from previous information systems (IS) and economics research. This research also sheds light on the business value of IT by showing the importance of complementarity between IT and strategy in firm performance, a subject which has also received limited attention in prior IS research.

Keywords: Information technology; Coordination; Diversification; Strategic direction; Financial performance

1. Introduction

Firms diversify by extending the scope of their operations into multiple markets. Diversification strategies are generally pursued when firms discover opportunities embedded in market structures and technology or when they encounter diminished opportunities for growth in their basic business [8]. In other words, firms diversify when they have consolidated their position in their base industry and hold underutilized resources that could be used in other sectors at low opportunity cost [7].

A firm can diversify its operations into related markets (e.g., TV and VCR or automobile and truck) and unrelated markets (e.g., TV and automobile). According to Hill [16], related diversification is pursued in order to achieve economic benefits by exploiting the interrelationships between multiple divisions (or markets), i.e., by sharing physical and human resources to achieve economies of scope and sharing marketing and technological know-how to

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realize economies of scale. On the other hand, unrelated diversification is pursued with the goal of realizing economic benefits from the exploitation of an internal capital market.[1] This is possible because capital can be more efficiently allocated in an internal market than in external markets.

When a firm pursues related diversification, its ability to achieve tangible economic benefits depends on increased coordination and communication among its different business lines [17,18]. The interrelationships among individual divisions require centralized decision making in order to facilitate coordination among them. Because centralized decision making makes it difficult to determine the efficiency of individual divisions, the firm increases the amount of information it processes in order to overcome this equivocality problem [16]. Thus, when a firm pursues related diversification, it should consider the costs of coordinating resources, including the costs of information sharing, across related markets [40]. When a firm pursues unrelated diversification, however, it must establish operating autonomy and a monitoring apparatus, i.e., a system within which divisions can be held accountable for their performance. This allows the firm to achieve maximum benefits from internal capital markets as well as facilitating least-cost behavior and the efficient allocation of capital resources within the firm [16]. In the case of unrelated diversification, there are no interrelationships among divisions, i.e., no sharing of business resources, such as managerial expertise and technical knowledge. Thus, unrelated diversification does not require as much coordination as related diversification [17,18].

Previous information systems (IS) research has examined the relationship between information technology (IT) and diversification based on the speculation that IT can affect firm structure by reducing the costs of coordinating economic activities within and between firms [14,19]. After examining the relationship between IT and diversification, Dewan et al. [14] found that diversified firms, especially in related lines of business, made greater investments in IT. They argue that their findings might reflect a greater need for coordination of assets and information processing within diversified firms. Hitt [19] provides similar findings from his analysis of the link between IT and diversification: firms that were more diversified had a higher demand for IT capital. He also argues that increased use of IT is associated with a slight increase in diversification.

Diversification can increase the demand for IT because of the need for coordination of business resources across multiple markets. Increased use of IT can improve the performance of firms that are highly diversified by reducing these costs, thus leveraging the economic benefits of diversification. However, the contribution of IT to the performance of diversified firms may depend on the direction of their diversification strategy. If a firm's strategic direction is oriented more toward related diversification, in which the coordination of resources is critical for achieving economic benefits, increased use of IT may improve the firm's performance by facilitating better coordination. However, if a firm's strategic direction is oriented more toward unrelated diversification, which does not require as much coordination as related diversification, increased use of IT may have less impact on the firm's performance. In other words, the impact of IT on the performance of diversified firms depends on the strategic direction of their diversification—how much emphasis they place on related diversification relative to unrelated diversification or vice versa.

This paper empirically examines the impact of IT on the performance of diversified firms by considering the strategic direction of different firms as measured by the difference of related and unrelated diversification indexes. By doing so, it tackles the following questions: "Does increased use of IT improve the performance of diversified firms?" and "In what context does IT improve their performance?" More specifically, this paper aims to answer the following question: "Does IT improve the performance of diversified firms when their strategic direction is oriented more toward related diversification?" Few studies, including the prior research mentioned above, have examined this issue and provided empirical evidence to support their answers.

[1] According to Caves et al. [6], unrelated diversification is undertaken when a firm finds reasons to move capital out of its base industry, despite a lack of assets that can be commonly utilized. Possible reasons are that its base industry is unprofitable, risky, or profitable but slow growing.